

IN THE CLAIMS

Please amend the claims as follows:

Claims 1 and 2 (Cancelled).

Claim 3 (Currently Amended): A hologram recording apparatus comprising:

a laser beam source,

split means for splitting a laser beam from the laser beam source into a first laser beam and a second laser beam,

a one-dimensional optical modulator in which a plurality of light-modulating pixels are arranged, and

a hologram-recording-medium disposing portion,

wherein part of the light-modulating pixels in said one-dimensional optical modulator optically modulate part of said first laser beam by a digital-data signal, and at least part of the other light-modulating pixels in two or more positions in said one-dimensional optical modulator optically modulate at least part of the other of said first laser beam by sync signals to obtain signal light by ~~[[a]]~~ the laser beam,

the signal light and reference light by said second laser beam are applied to a hologram recording medium to form on the hologram recording medium a recording section for said digital-data signal and recording sections for said sync signals in two or more positions having a predetermined interval.

Claim 4 (Currently Amended): A hologram recording apparatus according to claim 3,

wherein said one-dimensional optical modulator is formed of an array of a plurality of reflecting ribbons, and

each reflecting ribbon has a diffraction grating structure in which a phase of ~~an~~ the arriving laser beam is modulated by the displacement of the ribbon to be reflected and diffracted light is generated.

Claim 5 (Original). A hologram recording and reproducing apparatus comprising:
a laser beam source,
split means for splitting a laser beam from the laser beam source into a first laser beam and a second laser beam,
a one-dimensional optical modulator in which a plurality of light-modulating pixels are arranged,
a hologram-recording-medium disposing portion, and
a photodetector at least in one dimension, having a larger number of light-detecting elements than that of the light-modulating pixels in said one-dimensional optical modulator,
wherein at the time of recording, part of light-modulating pixels in said one-dimensional optical modulator optically modulate part of said first laser beam by a digital-data signal and at least part of the other light-modulating pixels in two or more positions in said one-dimensional optical modulator optically modulate at least part of the other of said first laser beam by sync signals to obtain signal light;
the signal light and reference light by said second laser beam are applied to the hologram recording medium to form on the hologram recording medium a recording section for said digital-data signal and recording sections for said sync signals in two or more positions retaining a predetermined interval; and

at the time of reproduction, the reference light by said second laser beam is applied to said hologram recording medium, said light-detecting elements in said photodetector receive reproduced light obtained from the hologram recording medium, and said digital-data signal

and said sync signals are detected to detect a shift in a position of said digital-data signal by the sync signals.

Claim 6 (Cancelled).